

Restaurant Table Reservation

There are a large number of restaurants (R) of different cuisines (C) each having different number of tables (Nr). The tables are arranged to sit 2,4 or 6 people. The customer group size can be between 1 to 10, both inclusive. Write a service that would be used by an app for customer table reservation.

The service implementation should include the API resource, business logic, database entity layer and table schema design for the following 3 restful APIs:

1. Check availability for an optimal table, for a given customer group size and a choice of cuisine.
2. Reserve a table for a group of customers

(If a group size is between 7 and 10, multiple tables need to be joined. It should reserve the most optimal table (e.g. a group of 3 should be seated in a table of 4, if available)

3. Free-up (unreserve) a table after the customers leave the restaurant.

Please use backend service any framework, database of your choice. Please use java or node.js as programming language. Please use local instance your preferred database type. The APIs should be testable using postman, when deployed on localhost.

Here is an example data set, not necessarily in the desired schema. Please feel free to use a different data set, if you prefer to do so.

Restaurant (R)	Cuisine (C)	Seating arrangements
A1	T1	2,4,6
A2	T1	2,4
A3	T1	4,6
A4	T1	2,4
A5	T1	2,4,6
A6	T1	2,4,6
A7	T1	2,4,6
A8	T1	2,6
A9	T1	2,6
A10	T1	2,4,6
B1	T2	2,4,6
B2	T2	4,6
B3	T2	2,4

B4	T2	2,4,6
B5	T2	2,4,6
B6	T2	2,4,6
B7	T2	2,4
B8	T2	2,4,6
B9	T2	2,4,6
B10	T2	2,4
B11	T2	2,4,6
B12	T2	2,4,6
C1	T3	2,4
C2	T3	2,4,6
C3	T3	2,4,6
C4	T3	2,4,6
C5	T3	2,4
C6	T3	4,6
C7	T3	2,4,6
C8	T3	2,4,6
D1	T4	4,6
D2	T4	2,4,6
D3	T4	4,6
D4	T4	6
D5	T4	4,6
D6	T4	2,4,6
D7	T4	4
D8	T4	2,4,6
D9	T4	2,4,6
D10	T4	4,6
D11	T4	2,4,6
D12	T4	2,4,6
D13	T4	2,4,6
D14	T4	2,4